ABSTRACT OF THE DISCLOSURE

The present invention provides methods of selectively inducing terminal differentiation, cell growth arrest and/or apoptosis of neoplastic cells, and/or inhibiting histone deacetylase (HDAC) by administration of pharmaceutical compositions comprising potent HDAC inhibitors. The oral bioavailability of the active compounds in the pharmaceutical compositions of the present invention is surprisingly high. Moreover, the pharmaceutical compositions unexpectedly give rise to high, therapeutically effective blood levels of the active compounds over an extended period of time. The present invention further provides a safe, daily dosing regimen of these pharmaceutical compositions, which is easy to follow, and which results in a therapeutically effective amount of the HDAC inhibitors *in vivo*. The present invention also provides a novel Form I polymorph of SAHA, characterized by a unique X-ray diffraction pattern and Differential Scanning Calorimetry profile, as well a unique crystalline structure.